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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,829	01/03/2007	Yoshihisa Doi	65341.00008	7066
32294	7590	01/05/2010	EXAMINER	
SQUIRE, SANDERS & DEMPSEY L.L.P. 8000 TOWERS CRESCENT DRIVE 14TH FLOOR VIENNA, VA 22182-6212			WEISS, PAMELA HL	
			ART UNIT	PAPER NUMBER
			1797	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/580,829	DOI ET AL.	
	Examiner	Art Unit	
	PAMELA WEISS	1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 October 2009.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

1. Applicant's arguments filed 10/13/2009 have been fully considered but they are not persuasive. The grounds of rejection previously set forth in the office action mailed 07/29/2009 are maintained.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forsberg (Re36,479) in view of Singer (US Re33124)

Regarding Claim 1:

Forsberg discloses an aqueous lubricant comprising

(a) a solid inorganic lubricating agent; (molybdenum disulfide C31 L25-28)

Forsberg does not explicitly disclose the amount of molybdenum disulfide solid lubricating agent as 10 to 40% by mass.

Forsberg also discloses that the functionally effective amount of the functional additive should be present so as to impart the desired properties intended by the addition of said additive. (C32 L57-68) It is the examiner's position that the concentration of molybdenum disulfide is therefore a result effective variable because changing it will clearly affect the type of product obtained. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

It therefore would have been obvious to a person having ordinary skill in the art at the time of invention to use an amount of molybdenum disulfide sufficient to provide the appropriate lubricating properties.

(b) Forsberg discloses isobutylene maleic anhydride copolymer (i.e. attaching agent having both lubricating and dispersing properties) (C27 L8) in the amount of 0.1 to

about 10% by weight (C31 L4-9) overlapping the claimed range of 2 to 20% by mass of an attaching agent having both lubricating and dispersing properties.

Forsberg discloses the amount of the attaching agent within/overlapping the claimed ranges. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);"

Forsberg discloses the composition further comprises water. (Abstract)

Forsberg et al. discloses materials such as ethylene glycol and analogous polyoxyalkylene polyols used as anti-freeze agents. (C33 L60-67) Forsberg also discloses that many of the ingredients exhibit or confer more than one property on such aqueous compositions and may provide several functions thereby eliminating or reducing the need for some other ingredient. (C34 L1-8) The examiner notes that ethylene glycol is an alkylene glycol and will therefore have wetting characteristics and moisture evaporation accelerating actions. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990) Forsberg discloses the ethylene glycol may be used in amounts depending on the degree of anti-freeze protection desired and will be known to those ordinary skill in the art.

Forsberg does not explicitly disclose (c) 2 to 20% by mass of an agent having both wetting characteristics and moisture evaporation-accelerating actions.

Singer discloses an aqueous fluid used in a variety of application including metal shaping. (Abstract). Singer discloses the aqueous fluid comprises a solid lubricant such as molybdenum disulfide (C3 L20-24) in a functionally effective amount (C5 L12-18), a dispersing agent such as alkylene glycols including those wherein the alkylene group has 2 to 4 carbons (5 L50-52) and is used in a functionally effective amount (C6 L25-30) and isobutylene maleic anhydride copolymers (C7 L8-10) in a functionally effective amount. (C7 L50-55) Singer discloses the composition has a major amount of water up to as 95-99% by weight. (C2 L47-52)

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the ethylene glycol in a functionally effective amount as contemplated by Forsberg and as disclosed by Singer which will overlap the claimed range of between 2 to 20% wt. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976);"

Further the amount of ethylene glycol is a result effective variable readily determined by one of ordinary skill in the art at the time of the invention as evidenced by both Forsberg and Singer, as it required only a determination of a functionally effective amount. See MPEP § 2144.05 (B). Case law holds that "discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding Claim 2

Modified Forsberg discloses the limitations set forth above. Forsberg discloses the aqueous lubricant, wherein the solid lubricating agent (a) comprises molybdenum disulfide.(Forsberg C31 L25-28)

Regarding Claim 3:

Modified Forsberg discloses the limitations set forth above. Forsberg also discloses the aqueous lubricant wherein the attaching agent (b) having both lubricating and dispersing properties comprises an isobutylene-maleic acid copolymer. (C27 L8)

Regarding Claim 4:

Modified Forsberg discloses the limitations set forth above. Forsberg also discloses the composition further comprising ethylene glycol meeting the limitation for alkylene glycol. (C33 L60-67) Forsberg also discloses that many of the ingredients exhibit or confer more than one property on such aqueous compositions and may provide several functions thereby eliminating or reducing the need for some other ingredient. (C34 L1-8) The examiner notes that ethylene glycol is an alkylene glycol and will therefore have wetting characteristics and moisture evaporation accelerating actions. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

Regarding Claim 5:

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Modified Forsberg discloses the composition of claim 5, as discussed for claims 1-4 above. Said rejections are incorporated herein.

6. Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singer (US Re33124).

Regarding Claims 1-5:

Singer discloses an aqueous fluid used in a variety of application including metal shaping. (Abstract). Singer discloses the aqueous fluid comprises a solid lubricant such as molybdenum disulfide (C3 L20-24) in a functionally effective amount (C5 L12-18), a dispersing agent such as alkylene glycols including those wherein the alkylene group has 2 to 4 carbons (5 L50-52) and is used in a functionally effective amount (C6 L25-30) and isobutylene maleic anhydride copolymers (C7 L8-10) in a functionally effective amount. (C7 L50-55) Singer discloses the composition has a major amount of water up to as 95-99% by weight. (C2 L47-52) Singer discloses the molybdenum disulfide may be used in a concentrate in an amount of 0.01-5 % wt, the alkylene glycol in an amount of 0.001-50% wt and the isobutylene maleic acid copolymer in an amount of 0.1-40% by weight. (C11 L10-16) See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976); Further, the amounts of alkylene glycol, molybdenum disulfide and isobutylene maleic acid copolymer are result effective variables as one of ordinary skill in the art would be able to determine the functionally effective amounts which would overlap the claimed ranges. See MPEP § 2144.05 (B). Case law holds that "discovery of an

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optimum value of a result effective variable in a known process is ordinarily within the skill of the art." See *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

The examiner notes that ethylene glycol is an alkylene glycol and will therefore have wetting characteristics and moisture evaporation accelerating actions. "Products of identical chemical composition can not have mutually exclusive properties." A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

Response to Arguments

7. Applicant's arguments filed 10/13/2009 have been fully considered but they are not persuasive.
8. Applicant argues Forsberg and Singer do not describe a precise amount of the various additives. It is undisputed that the references comprise all of the components of the claimed composition.

Regarding Forsberg:

Specifically applicant argues Forsberg does not disclose the amount of the additive of the alkylene glycol or an amount in functional terms of wetting characteristics and moisture evaporation. The claim limitation is to the amount of 2 to 20% by mass of the alkylene glycol component. Forsberg provides for the addition of the alkylene glycol in achieve anti freeze properties and expressly indicates that said amount would be readily determined by one of skill in the art (C33 L60-68 establishing that the amount of

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alkylene glycol used is a result effective variable). The amount used will overlap or fall within the claimed range. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

Absent evidence to establish that the amount of the alkylene glycol used would not fall within or overlap the claimed range and some evidence of criticality of the range, Applicant has not overcome the prima facie showing of evidence. The specification does not provide evidence that the claimed ranges are critical as no test results are submitted disclosing variation in performance or results by virtue of changing the amounts of each component used.

Forsberg discloses the use of polyols such as ethylene glycol or other polyoxyalkylene polyols as antifreeze agents in amounts to be determined by one of ordinary skill in the art to impart the desired anti freeze protection. (C33 L60-68)

Forsberg discloses the use of polyethylene glycol ether in an amount of 14.7% by weight (falling within the claimed range of 2 – 20% by mass).

Forsberg also discloses that many of the ingredients described for use in making the aqueous composition are industrial products which exhibit or confer more than one property on such aqueous composition. Thus, a single ingredient can provide several functions thereby eliminating or reducing the need for some other additional ingredient. (C34 L1-11) Since Forsberg discloses the claimed alkylene glycol, the alkylene glycol of Forsberg will also provide wetting and moisture evaporation actions. "Products of identical chemical composition can not have mutually exclusive properties." A chemical

composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990)

Forsberg in view of Singer discloses the alkylene glycol as a dispersing agent in a functionally effective amount. Also Singer discloses the alkylene glycol in a composition which is a concentrate in an amount which will fall within or overlap the claimed range of 2-20 %. See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a *prima facie* case of obviousness exists. See, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

Applicant argues adding the alkylene glycol of Singer to Forsberg contradicts the goal of Forsberg to eliminate the need for additional components. Forsberg does not prohibit or discourage the addition of additional components but discloses that because one component may serve more than one function it *may be possible* to reduce the number of components added (C34 L1-10). Forsberg expressly contemplates the alkylene glycol as well as other additives including but not limited to surfactants (C25 L35), thickeners (C26 L37) functional additives (C31 L10) and supplemental additives (C33 L3). As such, adding the alkylene glycol of Singer in a dispersing functionally effective amount to Forsberg would be obvious to one of ordinary skill in the art at the time of the invention and does not contradict the disclosure of Forsberg.

Regarding Singer:

Applicant argues Singer does not disclose the amount of the dispersing agent (i.e. alkylene glycol) and provides inconsistent information on the amounts of each component.

Singer discloses both a concentrate and a fully formulated fluid. The rejection relies upon the concentrate which discloses the compositions in amounts which overlap the claimed amounts. Since the claim is merely to an aqueous lubricant and indicates based on the amounts claimed that the composition may comprise up to 86% water thereby contemplating a concentrate. Singer discloses the concentrate comprises 0.01-5% molybdenum disulfide (component B of Singer), 0.001-50% alkylene glycol (component C of Singer) and 0.1-40% of the maleic acid copolymer (thickener of Singer) and other additives may be added as well with the balance water thereby overlapping the claimed ranges of each component.

Singer also contemplates a functionally effective amount of the alkylene glycol (C6 L25-30 a dispersing amount further establishing that the amount is a result effective variable capable of being determined by one of ordinary skill in the art). See MPEP 2144.05(I): "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. See, *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jain (US 4,104,178) which discloses a lubricant composition comprising water, ethylene glycol in an amount falling within the claimed range a

molybdenum compound and a thickener of a maleic anhydride. .Imai (US 6,455,476) which discloses an aqueous lubricant comprising molybdenum disulfide in overlapping amounts, polyethylene glycol and Uda et al (JP2003-206493) which discloses a water based lubricant comprising the isobutylene maleic copolymer in an amount falling within the claimed amount.

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PAMELA WEISS whose telephone number is (571)270-7057. The examiner can normally be reached on Mon.-Thur. 8:00am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn A. Calderola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/pw/

/Glenn A Caldarola/
Acting SPE of Art Unit 1797